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# Farewell Old Tractors, Hello Cleaner Air

Farmer Larry Cruff strives to run his vineyard one step ahead of the curve. Be it converting his vines to drip irrigation in the 1980s or replacing his old, polluting tractors over the past six years, he likes to remain innovative.

*Cruff inspects the engine block of his new, Tier 3 tractor which he uses to pull a grape harvester in between his vines.*

Cruff, a third generation grower in Fresno County, raises a mix of raisins and wine grapes on 550 acres with help from his children. He formed a relationship with the USDA's Natural Resources Conservation Service (NRCS) in the 1980s while converting his flood irrigation system to drip. Cruff was so happy with the change that he has regularly sought out other conservation practices to keep his operation sustainable and productive.

In 2009, Cruff read a local newspaper article highlighting a new NRCS program to improve on-farm air quality by scraping his old, polluting tractor and replacing it with a new, cleaner-emissions tractor. Cruff attended an informational meeting at his local Farm Bureau and later signed up for the program.

"There was a lot of discussion about stricter air quality rules coming down over the next few years," said Cruff. "I chose to start replacing my tractors early because I did not want to get caught needing to replace them all at once."

The NRCS program Cruff signed-up for is known as the National Air Quality Initiative (NAQI). Agricultural producers have the opportunity to apply for financial assistance to permanently destroy their in-use, off-road farm equipment powered by uncontrolled (Tier 0) emissions diesel engines and replace with new equipment powered with the cleanest emissions-certified diesel engines available. Diesel engines certified by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) are equipped with the latest and cleanest emission-reduction technologies, rated at "Tier 3" or "Tier 4" emission standards.

## Brief Explanation of the Diesel-Engine Tier Levels

The US EPA began the first set of Tier-certified emission standards for nonroad diesel engines in 1996. Uncontrolled diesel engines, also referred to as "Tier 0," releases the greatest amounts of diesel exhaust emissions. The emissions control levels range from Tier 1, the first applied emission standards, to Tier 4 by decreasing diesel exhaust emissions over 90 percent. Operating Tier 3 or Tier 4-certified diesel engines provide farmers the assurance that they meet current air quality emission standards and the peace of mind that they are doing their part to help improve air quality.

*The emissions reduction achieved by NAQI in California, through 2014, is equivalent to having removed more than 760,000 cars from California roads.*

Priority is targeted to farms within counties that EPA has designated as "nonattainment" for ozone and/or particulate matter. These counties experience air pollution levels that persistently exceed the National Ambient Air Quality Standards (NAAQS) established by the Clean Air Act.

"Through our collaborative efforts with the San Joaquin Valley Air Pollution Control District (SJVAPCD), the ARB, and the EPA, the voluntary emission reductions we have achieved are helping us meet our goals and objectives that are improving air quality," says Ted Strauss, air quality director for NRCS in California. "These efforts benefit public health and welfare."

*After old, inefficient tractors are turned in for destruction, through the NAQI program, their engines are drilled through and all components are crushed.*

EPA, which administers the Clean Air Act, establishes the NAAQS for common and widespread air pollutants based on the latest science available to protect public health and welfare nationwide. EPA sets air quality standards for six common "criteria pollutants," which are ozone, particulate matter, nitrogen dioxide, sulfur dioxide, carbon monoxide, and lead.

The NAAQS is the maximum ambient concentration of a particular pollutant that is considered safe. Areas experiencing ambient pollutant concentrations higher than those set in the NAAQS are designated as "nonattainment" and are subject to greater regulatory scrutiny. States develop and adopt State Implementation Plans (SIPs) calling for many segments of the community - including agriculture - to improve air quality.

Since 2009, NRCS California has invested more than $100 million in helping farmers replace more than 1,900 old, polluting tractors. By destroying the their old engines, the environment receives the assurances that old, polluting engines won't reappear somewhere else down the road. The emissions reductions achieved by NAQI in California, through 2014, is equivalent to having removed more than 760,000 cars from California roads -- and the number continues to grow.

While agriculture shoulders just one part of the air quality improvements needed to achieve the SIP goal successfully, the work done through NAQI has helped farmers in the San Joaquin Valley achieve and take credit for their contributions to improved air quality.

ARB has a similar program to NAQI, known as the Carl Moyer Program, which works in tandem with NRCS to replace as many Tier 0 tractors as available funding allows. When ARB's reductions are added to NRCS's the total reductions achieved are astounding.

"Leaders in the agriculture industry have done an outstanding job working with the air district and NRCS supporting and educating farmers to replace their older, inefficient tractors with cleaner burning units," said Aaron Tarango, representative for SJVAPCD. "Together, the reduction in emissions is the equivalent to removing 1 million vehicles off California's roads."

Cruff doesn't miss his old Massey Ferguson 275 tractor. When started, it would roar to life and cough out a billow of smoke. That tractor was crushed and its scrap metal recycled for other purposes. Cruff's new tractor runs clean and smooth, perfect for a hot day harvesting grapes.